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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/694,568	10/23/2000	Christopher F. Artig	14374.34	9789

22913 7590 05/13/2002

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EXAMINER

DUNN, DREW A

ART UNIT	PAPER NUMBER
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2882

DATE MAILED: 05/13/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/694,568

Applicant(s)

Artig et al.

Examiner

Drew A. Dunn

Art Unit

2882

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE three MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 7 Feb 2002
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_ 6) ☐ Other:



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Paper No. 5

Application Number: 09/964,568

Filing Date: 10/23/00

Applicant(s): Artig et al.

### DETAILED ACTION

It is noted that in response to the restriction requirement of 12/14/01, claims 1-18 have been elected without traverse and claims 19-24 have been cancelled.

#### *Claim Rejections - 35 USC § 112*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 9 recites the limitation "nickel" as a third component when only two components are claimed in claim 1. There is insufficient antecedent basis for this limitation in the claim. As best understood, this claim should depend from claim 8.

#### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weiss (U.S. Pat. No. 4,104,532).

Regarding claims 1, 2, 4, 6 and 11, Weiss teaches an X-ray tube wherein the shield (31) is tungsten (a first metallic component) embedded in copper (a second metallic component). See column 3, lines 5 and 6. As illustrated in Figure 2, the shield is formed in a predetermined shape. However, though Weiss teaches the embedding of tungsten in copper, it would have been obvious to one of ordinary skill that the reverse combination (Cu into W) could be done. Further, having the second metallic component is a melt would have been an obvious means for joining the two components so as to increase the uniformity of the formed component shield.

With regards to claims 3, 5, 7 and 9, absent any showing of criticality, the choice of concentrations would have been obvious to one of ordinary skill depending upon the predetermined amount of radiation attenuation desired. Specifically, each component has intrinsic properties and the adjustment and the determination of concentrations would have been to one of ordinary skill based on an obvious trial and error.

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With regards to claims 8 and 10, absent any showing of criticality, the substitution of one functionally equivalent element (having a predetermined intrinsic X-ray attenuation factor) used in X-ray attenuation for another would have been obvious to one of ordinary skill based on cost factors and the predetermined level of attenuation desired.

With regards to claim 12, the use of adhesion on an X-ray tube is well known as one means to connect or attach a structure (i.e. shielding) to said tube.

With regards to claims 13, 14 and 18, these claims are rejected for the same reasons used above with respect to claim 1. More specifically, the use of a rotating anode and cathode assembly disposed in a vacuum enclosure having a shielding to limit the amount of X-rays that pass through the housing is old and well known. Official notice is taken. However, in light of Weiss, it would have been obvious to one of ordinary skill to further have a mixture multiple components to form the shielding based on the rejection supra of claim 1.

With regards to claims 15-17, the use of fins for heat displacement is well known in the X-ray tube art and would have been an obvious modification to any rotating anode X-ray tube. Official notice is taken.

### *Conclusion*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: JP02001273998A to Artig et al. discloses an integrated housing 12 is equipped with a radiation shield layer 200 consists of metal powders which are adhered by a plasma flame coating method, and it is produced by a substrate material like a coba. For example, a power

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metal contains tungsten and an iron, therefore, a shield layer 200 provides an enough radiation shielding method and thermal conductivity characteristics, and an additional outside housing is not necessary. Since the integrated housing 12 is air-cooled, a liquid coolant is not utilized. Further, an assembly 10 utilizes a dielectric gel material which electrically insulates an electric connection part on the housing electrically. Auge (U.S. Pat. No. 4,184,097) discloses an the use of attenuating materials being tungsten and copper. See column 2, lines 63+ and claim 3.

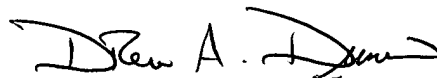
Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Drew A. Dunn** whose telephone number is (703) 305-0024. The examiner can normally be reached between the hours of 8:00 AM to 3:00 PM Monday thru Thursday and every other Friday (second Friday of the bi-week).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim, can be reached on (703) 305-3492. The fax phone number for this Group is (703) 308-7722 or (703)308-7724.

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [**drew.dunn@uspto.gov**].

All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.



Drew A. Dunn  
Primary Examiner Art Unit 2882  
6 May 2002